

[0027] What is claimed is:

1. An apparatus comprising first and second fractional-N synthesizers to provide first and second, respective, modulated outphased signals.
2. The apparatus of claim 1 further comprising:
first and second sigma-delta modulators operably coupled to the first and second fractional-N synthesizers, respectively wherein, the first and second sigma-delta modulators are able to modulate the first and second fractional-N synthesizers, respectively.
3. The apparatus of claim 2, wherein one or both of the first and second sigma-delta modulators are able to adjust an instantaneous frequency of one or both of the first and second fractional-N synthesizers, respectively, based on a desired power level of a transmitted frequency.
4. The apparatus of claim 3 further comprising:
a combiner to combine the first and second modulated outphased signals and to provide a radio frequency transmission signal having a power level substantially equal to the desired power level of the transmitted frequency.
5. The apparatus of claim 4, wherein the combiner comprises:
a reactive termination combiner associated with an adjustable amplifier.
6. The apparatus of claim 1, comprising:
a digital signal processor having the first and second sigma-delta modulators modules to control an instantaneous frequency of the first and second fractional-N synthesizers, respectively, based on a desired transmitted frequency.

7. The apparatus of claim, 6 wherein the digital signal processor comprises a separator module to provide first and second phase derivatives to the first and second sigma-delta modulators, respectively.
8. The apparatus of claim, 2 further comprising:
a separator to provide first and second phase derivatives to the first and second sigma-delta modulators.
9. The apparatus of claim 2, further comprising:
first and second variable gain amplifiers to adjust amplitudes of the first and second outphased modulated signals, respectively.

10. A method comprising:

generating first and second outphased signal by first and second fractional-N synthesizers, respectively.

11. The method of claim 10, wherein generating comprises:

modulating the first and second modulated outphased signals using first and second sigma-delta modulators, respectively.

12. The method of claim 11, further comprising:

separating an input signal into first and second phase-shifted signals; and
providing first and second phase derivatives of phases of the first and second phase-shifted signals, respectively, to the first and second sigma-delta modulators, respectively.

13. The method of claim 10, further comprising:

combining the first and second outphased signals; and
providing a transmission signal based on said combining of said outphased signals.

14. The method of claim 10, further comprising:

varying the amplitudes of the first and second outphased modulated signals.

15. An apparatus comprising:

~~first and second fractional-N synthesizers to provide first and second,~~
respective, modulated outphased signals;

first and second sigma-delta modulators operably coupled to the first and second fractional-N synthesizers, respectively to modulate the first and second fractional-N synthesizers, respectively;

a combiner to combine the first and second modulated outphased signal and, based on the combination of said outphased modulated signals, to provide a radio frequency transmission signal having a power level substantially equal to a desired power level of a transmitted signal; and

a dipole antenna to transmit the transmitted signal.

16. The apparatus of claim 15, one or both of the first and second sigma-delta modulators are able to adjust an instantaneous frequency of one or both of the first and second fractional-N synthesizers, respectively, based on a desired power level of a transmitted frequency.

17. The apparatus of claim 15, wherein the combiner comprises:
a reactive termination and an adjustable amplifier.

18. The apparatus of claim 15, comprising:
a digital signal processor having the first and second sigma-delta modulators modules to control an instantaneous frequency of the first and second fractional-N synthesizers, respectively, based on a desired transmitted frequency.

19. The apparatus of claim, 18 wherein the digital signal processor comprises a separator module to provide first and second phase derivatives to the first and second sigma-delta modulators, respectively.

20. The apparatus of claim, 15 further comprising:

a separator to provide first and second phase derivatives to the first and second sigma-delta modulators.

21. The apparatus of claim 15, further comprising:

first and second variable amplifiers to adjust amplitudes of the first and second outphased modulated signals, respectively.

22. A wireless communication system comprising:

~~a base station to transmit a desired power level value of a transmitted signal;~~
and

a mobile station comprising a transmitter having first and second fractional-N synthesizers to provide first and second modulated outphased signals, respectively, and first and second sigma-delta modulators operably coupled to the first and second fractional-N synthesizers, respectively, to modulate the first and second outphased signals based on the desired power level value of the transmitted signal.

23. The wireless communication system of claim 22, wherein the transmitter further comprises:

a combiner to combine the first and second modulated outphased signals and to provide a radio frequency transmission signal having a power level substantially equal to the desired power level of the transmitted frequency.

24. The wireless communication system of claim 22, wherein one or both of the first and second sigma-delta modulators are able to adjust an instantaneous frequency of one or both of the first and second fractional-N synthesizers, respectively, based on a desired power level of a transmitted frequency.

25. The wireless communication system of claim 22, wherein the combiner comprises:

a reactive termination and an adjustable amplifier.

26. The wireless communication system of claim 22, comprising:

a digital signal processor having the first and second sigma-delta modulators modules to control an instantaneous frequency of the first and second fractional-N synthesizers, respectively, based on a desired transmitted frequency.

27. The wireless communication system of claim, 26 wherein the digital signal processor comprises a separator module to provide a first and second phase derivatives to the first and second sigma-delta modulators modules, respectively.
28. The wireless communication system of claim, 22 further comprising:
a separator to provide a first and second phase derivatives to the first and second sigma-delta modulators.
29. The wireless communication system of claim 22, further comprising:
a first and second variable amplifiers to adjust amplitudes of the first and second outphased modulated signals, respectively.

30. An article comprising: a storage medium, having stored thereon instructions, that
~~when executed, result in:~~

generating first and second outphased signal by first and second fractional-N synthesizers, respectively.

31. The article of claim 30, wherein the instructions of providing, that when executed, further result in:

modulating the first and second modulated outphased signals using first and second sigma-delta modulators, respectively.

32. The article of claim 30, wherein the instructions of providing, that when executed, further result in:

separating an input signal into first and second phase-shifted signals; and
providing first and second phase derivatives of phases of the first and second phase-shifted signals, respectively, to the first and second sigma-delta modulators, respectively.

33. The article of claim 30, wherein the instructions of providing, that when executed, further result in:

combining the first and second outphased signals; and
providing a transmission signal based on said combining of said outphased signals.

34. The article of claim 30, wherein the instructions of providing, that when executed, further result in:

varying the amplitudes of the first and second outphased modulated signals.